STATE WATER RESOURCES CONTROL BOARD
BOARD MEETING SESSION – SANTA ANA REGIONAL WATER BOARD
SEPTEMBER 20, 2018

ITEM 2

SUBJECT

CONSIDERATION OF A PROPOSED RESOLUTION APPROVING AN AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE SANTA ANA RIVER BASIN TO INCORPORATE TOTAL MAXIMUM DAILY LOADS FOR SELENIUM IN FRESHWATER: NEWPORT BAY WATERSHED, ORANGE COUNTY, CALIFORNIA.

DISCUSSION

On August 4, 2017, the Santa Ana Regional Water Quality Control Board (Santa Ana Water Board) adopted Resolution No. R8-2017-0014, amending the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) to incorporate Total Maximum Daily Loads (TMDLs) for Selenium in Freshwater: Newport Bay Watershed, Orange County, California (Basin Plan amendment). The Basin Plan amendment is the result of an extensive public participation process that included representatives from local agencies, state and federal agencies, environmental groups, consultants, and other interested members of the public.

Impairment

Selenium is a bioaccumulative trace element that is naturally occurring in soils and geologic deposits in the Newport Bay watershed. Although selenium is an essential nutrient for vertebrate animals, there is a very narrow margin between nutritionally optimal and potentially toxic dietary exposures. Excessive amounts of selenium have been found to cause toxicity in fish, birds, livestock, and humans. Toxicological effects of selenium in fish and aquatic-dependent wildlife include lowered reproduction rates (e.g., impaired hatching in birds and failure to swim up for fish larvae), shortened life spans, stunted growth, and/or impaired immune response.

States are required to develop TMDLs for water segments listed as impaired on the Clean Water Act section 303(d) list (List). San Diego Creek Reach 1 and Peters Canyon Channel, the main tributary to San Diego Creek Reach 1, are both listed as impaired for selenium on the 2014 and 2016 combined California 303(d) list of water quality limited segments.

The proposed Selenium TMDLs address exceedances of the California Toxics Rule (CTR) chronic freshwater criterion for selenium of 5 micrograms selenium per liter (5 µg Se/L) and potential impairments to beneficial uses from elevated concentrations of selenium. These selenium TMDLs apply to the following freshwater drainage systems in the watershed: San Diego Creek, Santa Ana-Delhi Channel, and Big Canyon Wash subwatersheds. No impairments due to selenium were found in the saltwater bodies in the watershed (Upper or Lower Newport Bay).

Sources

Groundwater is the primary source of selenium in the Newport Bay watershed, and selenium concentrations are highly variable (less than 5 µg Se/L to greater than 400 µg Se/L). The groundwater enters surface waters either through active discharges (such as groundwater dewatering) or passively (such as diffuse widespread groundwater inflows, often referred to as "rising" groundwater). Rising groundwater accounts for the majority of the selenium loading in the watershed with point sources contributing less than 15 percent (%) of the annual selenium loads[1]. However, both types of discharges (active and passive) pose significant challenges due to the current lack of reasonably feasible treatment technologies to address selenium and the limited land available for facility placement given the high degree of urbanization in the watershed. Additionally, the applicable water quality objectives are under revision at both the State (revision of the CTR selenium criteria) and local (development of site-specific objectives for selenium) levels.

Allocations

Waste Load Allocations (WLAs) are allocated to municipal separate storm sewer system (MS4) Permittees and Other National Pollutant Discharge Elimination System (NPDES) Permittees. Load Allocations (LAs) are attributed to agriculture, open space, and rising groundwater. The allocations apply only during dry weather conditions year-round, and are expressed as semi-annual arithmetic means (April 1 through September 30 and October 1 through March 31).

Implementation

While these selenium TMDLs will provide a framework that will lead to the attainment of the applicable narrative and numeric objectives in currently impaired freshwater bodies within the Newport Bay watershed, these TMDLs have also been structured as phased TMDLs to allow time to address these identified challenges and constraints. In addition, the phased approach and longer compliance period (6 years and 30 years for Phase I and II, respectively) allows for the establishment and implementation of these TMDLs while the applicable water quality objective is under revision.

POLICY ISSUE

Should the State Water Resources Control Board (State Water Board) approve the amendment to the Basin Plan to establish TMDLs for selenium in the freshwater portions of the Newport Bay watershed?

FISCAL IMPACT

Santa Ana Water Board work associated with or resulting from this action will be addressed with existing and future budgeted resources.

[1] Non-point source groundwater contributes approximately 85% of the total annual selenium loads in the freshwater portions of the Newport Bay watershed with the San Diego Creek subwatershed being the largest source of selenium to the watershed. Other non-point sources of selenium (agricultural discharges, open space runoff and atmospheric deposition) account for less than 2% of the annual selenium loads in the Newport Bay watershed.

REGIONAL BOARD IMPACT

Approval of this resolution will amend the Santa Ana Water Board's Basin Plan.

STAFF RECOMMENDATION

That the State Water Board

1. Approve the amendment to the Basin Plan adopted under Santa Ana Water Board's Resolution No. R8-2017-0014.

2. Authorize the Executive Director or designee to submit the Basin Plan amendment adopted under Santa Ana Water Board Resolution No. R8-2017-0014 as approved and the administrative record for this action to the Office of Administrative Law.

State Water Board action on this item will assist the Santa Ana Water Board in reaching Goals 1 and 4 of the Strategic Plan: 2008-2012, 2010 Update: to protect and restore surface water quality and to comprehensively address water quality protection and restoration. This item will assist in reaching Goal 5 of the 2010 Update to improve transparency and accountability by ensuring that Santa Ana Water Board goals and actions are clear and accessible, by demonstrating and explaining results achieved with respect to the goals and resources available, by enhancing and improving accessibility of data and information, and by encouraging the creation of organizations or agreements that advance this goal. Approval of this item will assist in fulfilling Objective 4.3, Action 4.3.1, by which priority Basin Plan amendment needs are accomplished by collaborating in external stakeholder processes to address Santa Ana Water Board and Stakeholder interests with funding assistance or resources provided by the stakeholders.